

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Previously Presented) A solid state reaction method for the production of tetrabasic lead sulfate by reacting  $4\text{PbO}$  and  $\text{PbSO}_4$ , comprising the steps of:

mixing a stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$ ;

heating the stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$  at a temperature between  $500$  and  $700^\circ\text{C}$  for 3 to 8 hours; and

deagglomerating and sieving resulting tetrabasic lead sulfate.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Currently Amended) The solid state reaction method of Claim 1 wherein the step of heating the stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$  is performed at a temperature of approximately  $600^\circ\text{C}$ .
14. (Currently Amended) The solid state reaction method of Claim 13 wherein the step of heating the stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$  is performed for approximately 4 hours.
15. (Previously Presented) The solid state reaction method of Claim 1 wherein the tetrabasic lead sulfate has a particle size of less than  $10\text{ }\mu\text{m}$ .
16. (Previously Presented) The solid state reaction method of Claim 1 wherein the step of deagglomerating and sieving is a dispersion process.
17. (Previously Presented) The solid state reaction method of Claim 16 wherein the dispersion process is carried out under dry conditions.
18. (Previously Presented) The solid state reaction method of Claim 16 wherein the dispersion process is carried out in a liquid suspension.
19. (Currently Amended) A method of forming a battery plate comprising:
  - mixing a stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$ ;
  - heating the stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$  at a temperature between approximately  $500$  and  $700^\circ\text{C}$  for between approximately 3 and 8 hours to form tetrabasic lead sulfate;
  - deagglomerating and sieving the tetrabasic lead sulfate;
  - forming a paste using the tetrabasic lead sulfate; and
  - providing the paste on a battery plate.

20. (Currently Amended) The method of Claim 19 wherein the step of heating the stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$  is performed at a temperature of ~~approximately~~  $600^\circ\text{C}$ .

21. (Currently Amended) The method of Claim 20 wherein the step of heating the stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$  is performed for ~~approximately~~ 4 hours.

22. (Previously Presented) The method of Claim 19 wherein the tetrabasic lead sulfate has a particle size of less than  $10\text{ }\mu\text{m}$ .

23. (Previously Presented) The method of Claim 19 wherein the step of deagglomerating and sieving is a dispersion process.

24. (Previously Presented) The method of Claim 23 wherein the dispersion process is carried out under dry conditions.

25. (Previously Presented) The method of Claim 23 wherein the dispersion process is carried out in a liquid suspension.

26. (Currently Amended) A lead-acid battery produced by a method comprising:  
providing a battery comprising a plurality of battery plates, the battery plates prepared by a method comprising:

mixing a stoichiometric mixture of  $4\text{PbO}$  and  $\text{PbSO}_4$ ;

heating the stoichiometric mixture at a temperature between  $500$  and  $700^\circ\text{C}$  for a period of between ~~approximately~~ 3 and 8 hours to form tetrabasic lead sulfate;

deagglomerating and sieving the tetrabasic lead sulfate;

forming a paste using the deagglomerated and sieved tetrabasic lead sulfate; and

providing the paste on a battery plate.

27. (Currently Amended) The ~~method~~ lead-acid battery of Claim 26 wherein the step of heating the stoichiometric mixture is performed at a temperature of ~~approximately~~  $600^\circ\text{C}$ .

28. (Currently Amended) The ~~method~~ lead-acid battery of Claim 26 wherein the step of heating the stoichiometric mixture is performed for ~~approximately~~ 4 hours.

29. (Currently Amended) The ~~method~~ lead-acid battery of Claim 26 wherein the tetrabasic lead sulfate has a particle size of less than 10  $\mu\text{m}$ .

30. (Currently Amended) The ~~method~~ lead-acid battery of Claim 29 wherein the step of heating the stoichiometric mixture is performed at a temperature of approximately 600°C for ~~approximately~~ 4 hours.